

**Project title: Acetylcholinesterase Inhibitors as Potential Anti-Alzheimer  
Drugs: Prooxidative and Cytogenotoxic Properties (SafeAChE)**

[Inhibitori acetilholinesteraze kao potencijalni terapeutici za Alchajmerovu bolest: prooksidativna i citogenotoksična svojstva (SafeAChE)]

**Project code:** 337-00-205/2019-09/19

**Project type:** Project of bilateral scientific and technological cooperation between Republic of Croatia and Republic of Serbia

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**Participants:**

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**Short project description:**

Acetylcholinesterase (AChE) is a serine hydrolase that terminates impulse transmission at cholinergic synapses by the rapid hydrolysis of neurotransmitter acetylcholine. Reversible inhibitors of this enzyme have been applied in the symptomatic treatment of Alzheimer's disease associated with the loss of cholinergic neurons in the brain and the decreased level of acetylcholine. Although the AChE inhibitor therapy results in improving cognitive abilities, the long-term application may induce undesirable side effects such as gastrointestinal problems and hepatotoxicity. For this reason, new compounds have been synthesized in order to find both efficient and less toxic pharmaceuticals for neurological disorders. Considering toxicity is a main limitation in the clinical application of physiologically active agents, the objective of this project is to evaluate *in vitro* prooxidative and genotoxic effects of synthesized metal-based compounds, promising anti-Alzheimer therapeutics exhibiting strong anti-AChE action.